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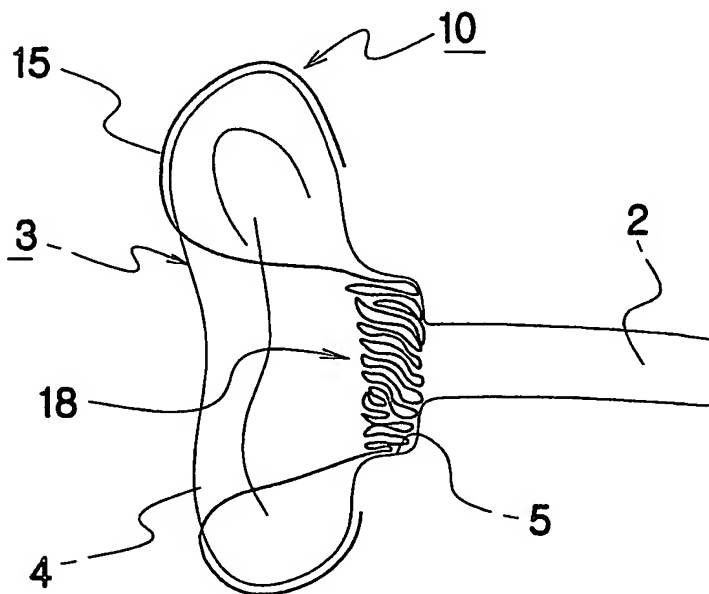
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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(54) Title: DISPOSABLE EAR PLUG



(57) Abstract: Disclosed is a disposable ear plug for protecting a user's ears from noise. The disposable ear plug which includes a disposable soundproofing sheet (10) including a base sheet (15) such as a crumpleable paper and an artificial cell membrane containing water or oil. The disposable soundproofing sheet is irregularly crumpled at the center thereof to form a crumpled part (18) and the crumpled part is inserted in a depression of an auricle while wholly covering an ear, thereby shielding the user's ears from unpleasant noises while allowing the user to hear attenuated sounds and protecting the user from earaches caused by the insertion of the ear plug into an external auditory canal of the ear, and preventing discomfort from the sense of an alien substance embedded in the ear. Furthermore, the degree of noise attenuation is controlled by adjusting the crumpling of the soundproofing sheet.

FIG. 1

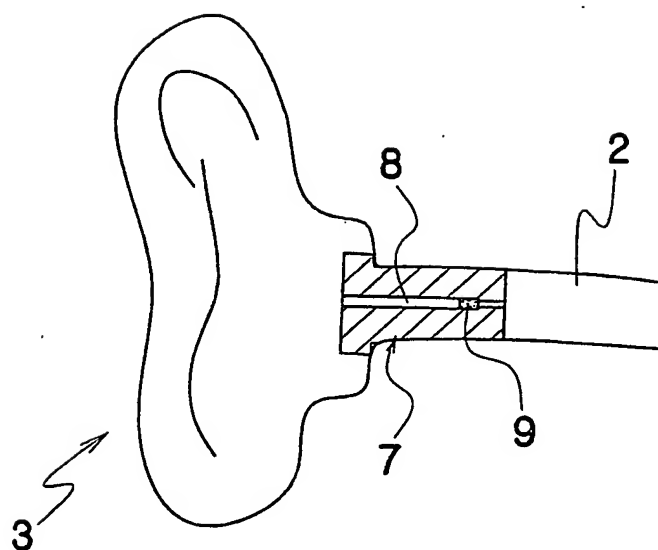


FIG. 2

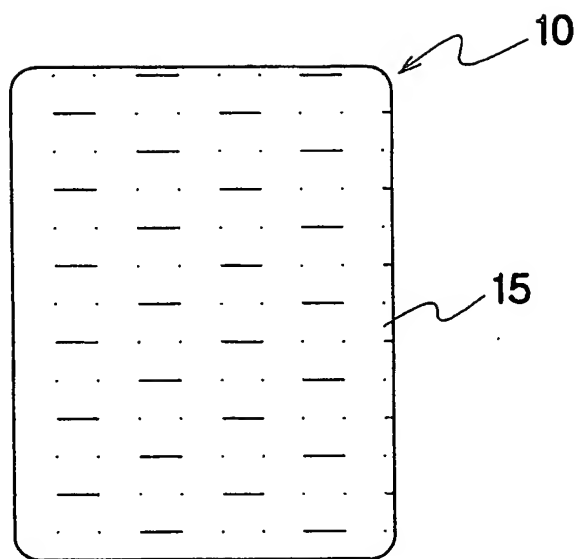


FIG. 3

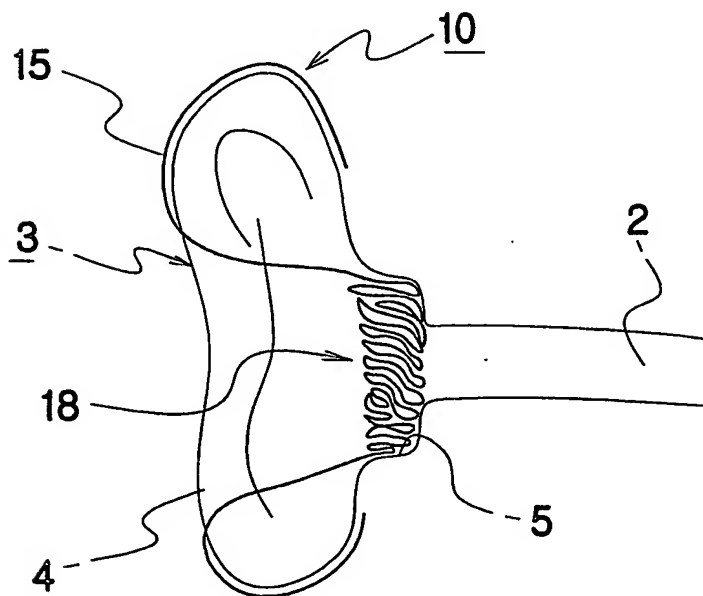


FIG. 4

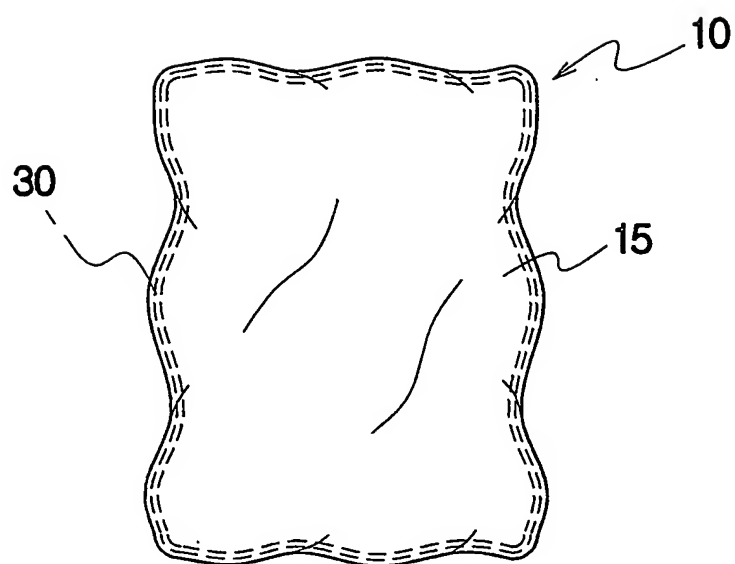


FIG. 5

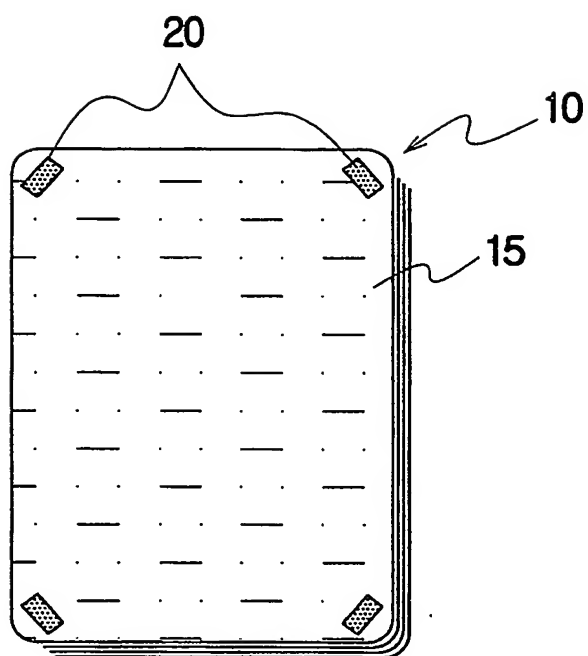


FIG. 6

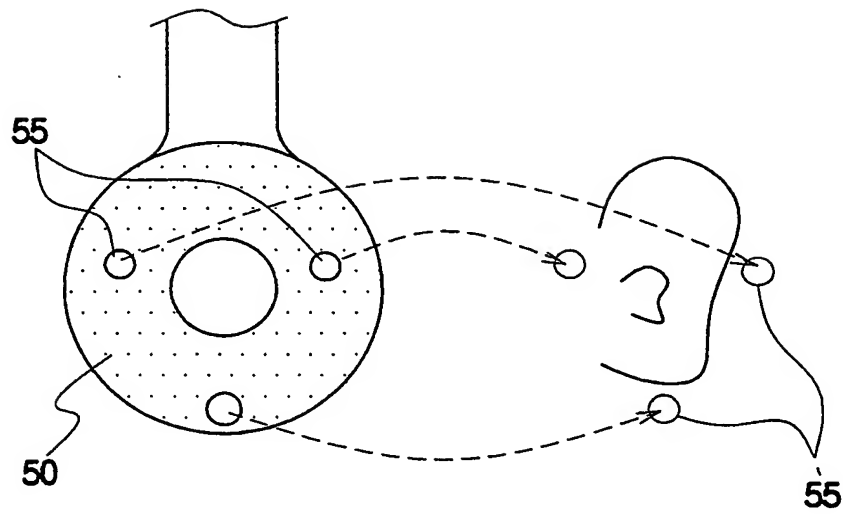
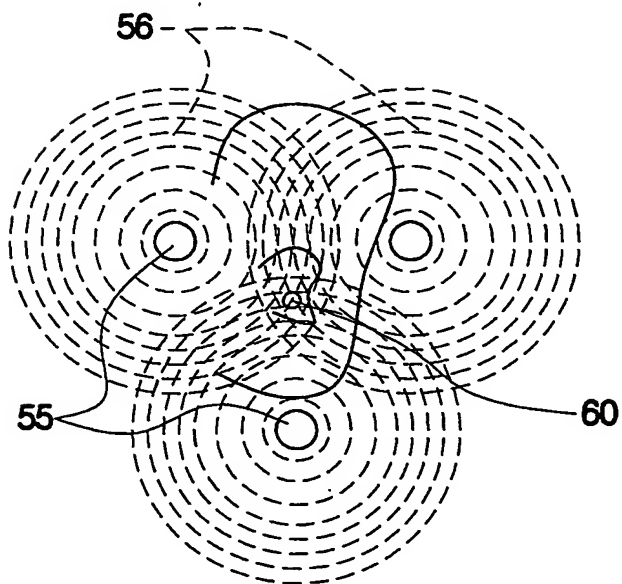


FIG. 7



INTERNATIONAL SEARCH REPORT

ational application No.
PCT/KR03/00404

A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 D21H, A61F 11/06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NPS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 96-39559 A (ECC INTERNATIONAL LTD.) 12.DECEMBER. 1996 See the descriptions	1 - 4
A	US 5543067 A (THE PROCTER & GAMBLE COMPANY) 6. AUGUST. 1996 See the whole documents	1 - 4
A	EP 108728 A (AMPLISILENCE SPA) 16. MAY. 1984 See the descriptions	1 - 4
A	KR 226278 B (LEE, WANG-KI) 15. JUNE. 2001 See the fig 2 - 4	5 - 6

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Parent family member(s)	Publication date
GB2301785A	18.12.1996	AU5841896A	24.12.1996
		AU695916B2	27.08.1998
		GB2301785A	18.12.1996
		JP11502904T	09.03.1999
		W09639559A1	12.12.1996
US5543067A	06.08.1996	US5543067A	06.08.1996
EP0108728A2	16.05.1984	DE3376465D1	09.06.1988
		EP0108728A2	16.05.1984
		IT1156545B	04.02.1987
KR226278 B	15.06.2001	NONE	